

Application No. 09/855,255

RXSD 1008-1

REMARKS

In the Official Action mailed 26 January 2005, the Examiner reviewed claims 1-42 and 46. The Examiner has rejected claims 1-12, 26 and 29-30 under 35 U.S.C. §103(a); and the Examiner has allowed claims 13-25, 27, 28, 31-42 and 46.

No claims are amended. Claims 1-42 and 46 remain pending.

The Examiner's rejection is respectfully traversed below.

Rejection of Claims 1-12, 26 and 29-30 under 35 U.S.C. §103(a)

Claims 1-12, 26 and 29-30 are rejected under 35 U.S.C. §103(a) as being unpatentable over Lee (U.S. Patent No. 6,563,803) in view of Takada (U.S. Patent No. 6,173,058) and further in view of Cornelisse (Patent Appln. Pub. No. US 2002/0076072). Applicant respectfully submits that the references cited do not include all the limitations recited in independent claim 1, from which all of claims 2-12, 26 and 29-30 depend. The Examiner's *prima facie* case is based on a mistake in fact, as discussed below, and reconsideration is requested.

In particular, the combination of references does not include at least the step recited in claim 1 of "*combining the far-end signal with the noise-reduced near-end signal to create a combined signal.*"

In particular, Lee describes systems for echo cancellation, in which the output produced is a noise signal output at multiplexer 216, selected from a signal  $c(n)$  representing the near-end signal after echo cancellation, or from a signal (unnamed) provided by comfort noise generator 214. Lee does not describe an output comprising a combination of a noise-reduced near-end signal with the far-end signal.

The Examiner mistakenly takes the position that the signal  $y(n)$  "hat" at the input of summer 208, represents the far-end signal. In fact, the signal  $y(n)$  "hat", computed using the filter 212, is an estimate of the signal  $y(n)$  produced by the "unknown echo channel." Lee, col. 4, lines 39-46. The summer 208 subtracts  $y(n)$  "hat" from the near-end signal to remove the echo signal  $y(n)$ . The signal  $e(n)$  at the output of the summer 208, therefore is only the near-end signal after echo cancellation. The Examiner's reading of Lee is mistaken therefore, because the signal  $e(n)$  is not a combination of the far-end signal and the noise-reduced near-end signal. Rather, it is only the near-end signal after echo cancellation, with no components of the far end signal.

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The Examiner relies upon Takada for the amplification step. However, as noted by the Examiner, Takada only amplifies near-end signals, and does not amplify a combination of a noise-reduced near-end signal with a far-end signal. The output of Takada's summing means 14 and input to amplification means 15 is  $2*S(n)$ , which is a representation of the near end signal only, with no far end signal components. Even though the schematic in Fig. 2 of Takada shows lines that can be followed to connect the far-end signal  $X(n)$  with the amplifier (15), the signal passed to the amplifier has no far-end signal components. Moreover, the amplification provided by amplifier 15 is intended to compensate for processing artifacts (i.e., the input has become  $2*S(n)$  rather than the desired  $S(n)$ ). Takada does not apply amplification, as stated in claim 1, to the combined signal made by combining noise-reduced near-end signal and far-end signal, as a function of the fitting formula and the near-end signal

The Examiner relies on Cornelisse for amplification base on a "fitting formula." However, Cornelisse arises from a different setting altogether, and does not relate to amplification based on a fitting formula of a combined signal as required by the claims.

Claims 2-12, 26 and 29-30 depend from claim 1 and are allowable for the same reasons, and because of the unique combinations recited.

Therefore, the Examiner's *prima facie* case is based on a mistake in fact, and reconsideration of the rejection of claims 1-12, 26 and 29-30 is respectfully requested.

#### Allowable Subject Matter

Claims 13-25, 27, 28, 31-42 and 46 have been allowed by the Examiner. Such claims have not been amended.

#### **CONCLUSION**

It is respectfully submitted that this application is now in condition for allowance, and such action is requested.

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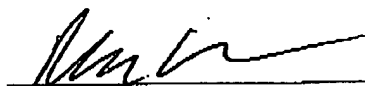
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The Commissioner is hereby authorized to charge any fee determined to be due in connection with this communication, or credit any overpayment, to our Deposit Account No. 50-0869 (RXSD 1008-1).

Respectfully submitted,

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